

PCT

INTERNATIONAL-TYPE SEARCH REPORT

(PCT Article 15.5)

COPY

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| National application No. 0202074-1 | Country or Office of filing SE | Applicant's or agent's file reference. PU 0242-SE |
| Filing date (day/month/year) 28 June 2002 | | (Earliest) Priority Date (day/month/year) |
| Applicant Amersham Biosciences AB | | |

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| Date of request for international-type search 28 June 2002 | International-type search request No. SE 02/00644 |
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This international-type search report has been prepared by this International Searching Authority and is transmitted to the applicant.

This international-type search report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☒ Certain claims were found unsearchable (See Box I).

2. ☐ Unity of invention is lacking (See Box II).

3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international-type search was carried out on the basis of the sequence listing

☐ filed with the international application.

☐ furnished by the applicant separately from the international application,

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ transcribed by this Authority.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Due to the expression "a highly charged linear polymer that comprises quaternary amino groups", present claim 1 (and dependent claims 2-8 and 10-16) relate to an extremely large number of possible methods. Support within the meaning of Article 6 PCT is to be found, however, for only a very small proportion of the methods claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Consequently, the search has been focused on those parts of the claims which appear to be supported and disclosed, namely those parts related to a method involving the precipitating agents used in the examples of the description (poly(N',N'-dimethyldiallylammonium chloride)) and the agents mentioned in present claim 9.

The expression "selectively precipitate" in claim 1 is unclear and not specifically defined, making the scope of the claim unclear.

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: C12N 15/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: C12N, C07H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI-DATA, PAJ, BIOSIS, MEDLINE, CHEM. ABS DATA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | US 4055469 A (ROY EUGENE SNOKE ET AL), 25 October 1977 (25.10.77), see especially column 4, lines 39-51, column 5, lines 36-41, column 7, lines 30-34, column 8, lines 13-15, column 9, lines 24-32 | 1,3,5,14 |
| Y | -- | 2,4,6-13, 15-16 |
| X | EP 1031626 A1 (QIAGEN GMBH), 30 August 2000 (30.08.00), abstract, page 4, line 18 - page 5, line 26 and page 38, claim 28 | 1,5,14 |
| Y | -- | 2,4,6-13,16 |

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international-type search

4 February 2003

Date of mailing of the international-type search report

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| C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|---|--|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| Y | Biopolymers (Nucleic Acid Sciences, Vol. 52, 1999, Vladimir A. Izumrudov et al: "Controllable Stability of DNA-Containing Polyelectrolyte Complexes in Water-Salt Solutions", page 94 - page 108 -- | 2,4,6-13, 15-16 |
| A | Bioseparation, Vol. 7, 1999, Vladimir A. Izumrudov et al: "Polycomplexes - potential for bioseparation", page 207 - page 220 -- | 1-16 |
| A | US 2002010145 A1 (RICHARD C. WILLSON, III ET AL), 24 January 2002 (24.01.02) -- | 1-16 |
| A | Biotechnology Techniques, Vol. 12, no. 8, August 1998, D. K. Ramsden et al: "Flocculation of cellular material in complex fermentation medium with the flocculant poly(diallyldimethylammonium chloride)", page 599 - page 603 -- | 1-16 |
| A | US 5010183 A (DONALD E. MACFARLANE), 23 April 1991 (23.04.91), column 2, lines 48-52, column 3, lines 24-36 -- | 1-16 |
| A | WO 9929840 A1 (THE PERKIN-ELMER CORPORATION), 17 June 1999 (17.06.99) -- ----- | 1-16 |

INTERNATIONAL TYPE SEARCH REPORT
Information on patent family members

30/12/02

Search request No.

SE 02/00644

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| US | 4055469 | A | 25/10/77 | CA | 1095446 | A | 10/02/81 |
| | | | | DE | 2755034 | A,C | 15/06/78 |
| | | | | FR | 2387243 | A,B | 10/11/78 |
| | | | | GB | 1590310 | A | 28/05/81 |
| | | | | JP | 1112710 | C | 16/09/82 |
| | | | | JP | 53072891 | A | 28/06/78 |
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| EP | 1031626 | A1 | 30/08/00 | JP | 2000342259 | A | 12/12/00 |
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| US | 2002010145 | A1 | 24/01/02 | NONE | | | |
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| US | 5010183 | A | 23/04/91 | NONE | | | |
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| WO | 9929840 | A1 | 17/06/99 | AU | 1633199 | A | 28/06/99 |
| | | | | CA | 2310782 | A | 17/06/99 |
| | | | | EP | 1037971 | A | 27/09/00 |
| | | | | JP | 2001526182 | T | 18/12/01 |
| | | | | US | 5972613 | A | 26/10/99 |
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